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ABSTRACT

A study examined the extent of cooperation and coordination between and among agencies and individuals responsible for job training, vocational-technical and occupational education programs, and supportive services in Maryland. Two methods of inquiry were used in the study. First, a questionnaire was mailed to the director or coordinator of vocational-technical education in each of the 24 local education agencies (LEAs) and deans of each of the 17 community colleges in the state. Responses were obtained from all the community colleges and 18 LEAs. Next, the principal investigator interviewed a number of individuals connected with vocational-technical education and Job Training Partnership Act private industry councils. The study showed that additional progress in the area of articulation has been made since a similar study was conducted in 1984. Eleven community colleges report permitting high school students to take vocational courses at college, and deans in nine community colleges have formal policy statements between their board and local school boards. The data collected show increased interest and activity in the area of program articulation, with 21 of 38 respondents indicating changes in the past 2 years and 27 of 39 expecting further changes over the next 2 years. Nevertheless, inadequate communication among program administrators and others regarding common programs and problems remains a major cause of delayed progress toward articuation and linkages among related programs. (Appendixes include 15 tables detailing current and planned activities for coordinating vocational-technical education, job training, and supportive services.) (MN)

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VOCATIONAL-TECHNICAL EDUCATION PROGRAM ARTICULATION AND LINKAGES IN MARYLAND

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Governor's Employment and Training Council

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PART I

Introduction

Description of the Study:

The principal objective of this study is to provide an assessment of the extent of cooperation and coordination among and between agencies and individuals responsible for job training, vocational-technical and occupational education programs, as well as supporting services, in our State. It is not intended to be a detailed analysis of these programs, nor does it attempt to evaluate performance beyond the extent to which they are working together.

This limited objective, nevertheless, serves an essential, albeit small, part of a very broad charge to the Governor's Council under section 122 of the federal Job Training Partnership Act of 1982 (JTPA) to oversee the job training programs assisted under such Act and review the operation of other education and training programs and supporting services designed to prepare people for employment. A specific charge to the Council is to "identify ... the employment and training and vocational education needs throughout the State, and assess the extent to which employment and training, vocational education, rehabilitation services, public assistance, economic development, and other Federal, State, and local programs and services represent a

consistent, integrated, and coordinated approach to meeting such needs." This study concentrates on coordination between several of the key programs, mainly public high school vocational-technical education, community college occupational education, and the JTPA programs, but is not entirely limited to those programs.

This report looks at program coordination during 1985, and recognizes that the subject-matter is in a state of flux and is sufficiently complicated to prevent capture of all the details. A major portion of the report deals with the articulation of vocational-technical/occupational education programs between high schools and community colleges, because the Council rightly felt that our public education system is the key instrument -- one extensively relied upon for JTPA programs -- for preparing Maryland's workforce for successful participation in an increasingly volatile labor market. The remainder of the report details the impressions of program supervisors of the degree of cooperation between programs, draws some conclusions about problems encountered, and makes recommendations for attacking these problems.

We deeply appreciate the assistance of all those who took the time to complete the questionnaire and to personally discuss the progress, problems, and promise of vocational-technical education and job training programs in our State. Without exception, and despite differing viewpoints and

positions on some issues, they care deeply about the people they are serving and the quality of service they are rendering.

Inevitably, the conclusions and recommendations reported from the study, as well as the style and tone of the report itself, are determined by those who write the report, and the authors assume sole responsibility for them. But reasonable efforts have been made to sift through a considerable mass of information, distill the essence that bears most directly upon public policy, and present it straightforwardly. It is not expected that those concerned will agree with everything said in this report, but, especially with respect to conclusions and recommendations supported by a solid consensus among those most responsible for providing job training and vocational-technical education, it is hoped that the response of policy makers will be positive.

A note on terminology: the study and this report deal with cooperation and linkages between education and training programs designed to prepare individuals for entry-level employment in occupations for which a baccalaureate or higher academic degree is not required. That is the traditional definition of vocational education, and includes programs ranging from a few weeks of very specific job training to a full two-year community college program for which an Associate Degree is awarded. In Maryland, voca-

tional programs are called "vocational-technical education" ("vo-tech") in our high schools and "occupational education" in our community colleges. The use of both terms "vocational-technical/occupational education" where one would serve is clumsy, so except where clarity demands otherwise, this report uses "vocational-technical education" as the generic term for high school and community college vocational education programs.

There is a large poster at BWI airport, featuring a huge carrot, that announces that Maryland has advantages as a location for business and industry. The advantages are very real: geography no other State can match for its variety and interest in a compact area; excellent rail, highway, air, and sea transportation astride the center of the East coast megalopolis; easy access to all the cultural amenities of four or five great cities; a productive workforce; a good system of public schools and community colleges,1 capped by two first-rate public universities, a number of excellent four-year colleges and universities (both public and private), and the U.S. Naval Academy; and, finally many federal institutes and armed services installations.

Industry -- and particularly the increasingly important segment defined as high-technology firms -- looks at all these factors, and others such as a friendly governmental and

tax climate, in deciding where to locate or expand. Study after study has shown, however, that one of the critical considerations in firm location or expansion is a state's educational system. A first-rate system of vocational-technical education, able to respond quickly and effectively to needs for technicians and other skilled workers, is a very large "plus" for a state competing for economic development.

In 1982 the staff of the Joint Economic Committee of the Congress issued a report. "Location of High Technology Firms and Regional Economic Development," which was apparently the first such study in the "high tech" sector of the economy. It showed that over one-quarter of the total increase in manufacturing jobs in the period 1975-79 was in high technology industries. But these gains were not evenly distributed nationally. In Massachusetts, it was 57.8 percent of new manufacturing jobs, and in Maryland a mere 3 percent.

The report findings were based on 691 responses from 1,750 high technology companies. The number one attribute among twelve major factors influencing regional location choices (ranking ahead of labor costs, tax climate, academic institutions, cost of living, transportation and access to markets -- the next seven factors ranked in this order) was labor skills and availability, with 89.3 percent ranking it

"significant or very significant" in making location decisions (over 30 points above "academic institutions"). Among fourteen factors listed as influencing location within a region, "the availability of workers" was rated number one by far (96.1 percent rating it "significant or very significant"). Within the category of workers, the availability of technical workers and skilled workers was rated higher (96.1 and 88.1 percent) than that of professional workers (87.3 percent). Proximity to good schools for their employees' children was rated seventh, with 70.8 percent of the respondents saying it was "significant to very significant." Where do most companies find technical workers and skilled workers? It is very likely to be within the state in which they relocate or establish a new plant. They are more likely to move their professional personnel with them or recruit them from a wider area. It isn't very difficult in this context to see the importance of a public school/community college system that utilizes its maximum potential to produce skilled workers and technicians. The political and educational leadership of our State should take a closer look at the factors that constitute a "carrot" for the type of industry that we are trying hardest to attract to Maryland.

Attracting new industry is a vital concern to our State. Yet, it is only one of a number of compelling

economic and social reasons for meeting the education and training needs of our workforce, including persons preparing to enter it, displaced workers, and those who need upgraded skills to keep jobs in a workplace undergoing rapid change. By whatever term we choose to describe this time of change - "post-industrial society," "information age," "technological revolution," etc., - the effects are evident throughout the industrialized world. They are acutely felt in the "smokestack" industrial areas of our own country and in our state which, economically as well as geographically, comes close to being "America in microcosm." We have entered a period when the age group -- 16-24 -- that normally swells the ranks of new entries in the labor force is shrinking. It is a time of continuing structural changes in our economy as industrial production jobs decrease and service industry jobs increase, the demand for trained technicians increases, and the effects of technology changes skills needed in traditional settings such as the office occupations. More older workers will need training and retraining, and our smaller 16-24 year old population will include a larger percentage of disadvantaged and minority youth who need special help to compete in the job market. This is a familiar, and by now even hackneyed, analysis among those who have studied economic and demographic changes that will

affect the whole nation -- and Maryland -- for the rest of this century.

The implications for education are clear: increased emphasis on vocational-technical education; flexibility in designing those programs to meet the needs of a changing workforce and a changing job market; and economically and efficiently managed programs. Undoubtedly, there are many ways to bring about program improvement: updated curricula, staff development, modern instructional equipment, and increased financial support, among others. Issues involving these internal processes are beyond the scope of this study. The need for strong communication and cooperation among and between agencies and individuals responsible for all forms of vocational-technical education in our State is an important corollary to significant changes in the delivery and quality of vocational/technical education services within the State.

Maryland's Educational Advantage

The geography and history of our State combine to give us an educational advantage, one particularly applicable to the task of preparing people for good jobs as skilled workers and technicians in the contemporary and emerging economy. The 24 political subdivisions and public school systems are divided along the same geographical lines. Only

three other states and the District of Columbia have fewer school districts; half the states have between 208 and 1,075 operating school districts and half of the remaining states have over 100 districts. This situation has created a manageable system. Moreover, five of Maryland's districts rank among the thirty-five largest in the nation, and well over half the nation's operating school districts have fewer pupils than the smallest district, Kent County. Thus, most of our districts have sufficient students to realize advantages of size.

This highly manageable public school system is coupled with an excellent community college system in which a college is easily accessible to most residents of Maryland. Additionally, the community colleges offer a wide range of programs designed to serve academic, vocational, and avocational needs and interests of the population. Few other states have anything approaching as compatible a system, one ideally suited to achieving close cooperation between secondary and post-secondary vocational-technical education and with public and private agencies providing job training, apprenticeship, rehabilitation, and related programs and services.

It is important, therefore, that public officials, educational policymakers and practitioners, and the general public appreciate fully the opportunities inherent in the

system and utilize it to the fullest extent possible. The aim of this study is to assess the coordination and linkages which currently exist and to aid the State's attempts to reach its goals.

PART II

Vocational-Technical Program Articulation

Articulation Defined and Described

In 1984, the State Board for Community Colleges (SBCC) made an informative and helpful report on articulation of high school and community college instructional programs in Maryland. The report used the Webster's New Collegiate Dictionary definition of articulation as "the action or manner of joining or interrelating." Articulation in the context of secondary/post-secondary education includes a wide range of possible activities designed either to assist students in bridging the gap between high school and college or to create a closer relationship between high school and college instructional programs, or both. Ultimate articulation would entail a melding of the two instructional programs into a smooth continuum. This is not so easily achieved when two separate systems are involved, and for a variety of reasons it is more difficult in vocational-technical programs than in the regular academic curriculum.

The SBCC study produced an inventory of the use by community colleges of four types of articulation: admission of high school students to college courses; advanced placement and award of college credit based on examination; advanced placement with or without college credit based on

high school courses; and formal agreements between governing boards in the form of general policy statements and specific program letters of agreement. This last type is mostly used for vocational-technical programs. Examinations sponsored by the College Board (Advanced Placement and College Level Examination Programs -- "AP" and "CLEP"), which also was included in the inventory, are more often used for academic programs.

All of the community colleges reported using one or more of the four types of articulation, with by far the most common being admission of high school students in college courses and the award of advanced placement and college credit based on examination. Advanced placement based on completion of high school courses (in a majority of cases without college credit), which generally requires more agreement on the content of courses, is much less common, as is the working out of formal policy statements and letters of agreement on the articulation of specific instructional programs.

The 1984 bill to extend the Vocational Education Act of 1963 (H.R. 4164, 98th Congress) that passed the House of Representatives specifically authorized the use of Federal vocational education funds for "the design and implementation of planned, sequential vocational programs between the secondary and post-secondary levels of education." H.R. 4164

was introduced by the Chairman of the House Education and Labor Committee and 22 bipartisan co-sponsors, based on a draft prepared jointly by the American Vocational Association and the American Association of Community and Junior Colleges. It represented the carefully conceived positions of national leaders in vocational-technical education.

Optimum articulation of vocational-technical programs in our high schools and community colleges would consist of planned, sequential, integrated instructional programs in all subject areas for which that is feasible, spanning the 11th grade in high school through the second year in community college, jointly developed by the administrative and instructional staffs of the high schools and community colleges. Thus, the two systems would be closely linked in a manner that also should encourage sharing physical facilities, equipment, and staff resources and help eliminate duplication and overlapping of instructional programs.

The Importance of Articulation

The SBCC report stressed the importance of program articulation. It is noted that "approximately 60,000 seniors graduated from public and private high schools in Maryland in Spring 1983, [and about] one-fourth of those went on to enroll in one of Maryland's 17 community colleges in the Fall," and stated that "it is clearly in the interest of

these students to provide community college curricula that flow from and build upon the high school offerings." "Additionally," the report stated, "articulation makes sense from a state-level financial perspective in that it helps to minimize the duplication of courses at the secondary and post-secondary levels and the staff and resources required to offer them." In brief, SBCC concludes that articulation benefits both students and taxpayers.

Articulation is both more needed and more difficult to achieve for the vocational-technical programs than for the academic programs. The savings from elimination of duplication of effort and from a better use of staff and other resources are greater, however, because the very natures of vocational-technical programs often require expensive equipment and machines (subject to technological obsolescence) and instructors with skills in short supply. Moreover, these programs enroll almost half of all Maryland high school and community college students: in the Fall of 1984, 44.3 percent of our public high school students in grades 10-12 were enrolled in occupationally-specific vocational- technical programs, and 47 percent of community college students enrolled for credit were in occupational education programs. Obviously, any development, such as improved program articulation, that would enhance the

educational and career opportunities of this many students should have a high priority in our planning.

The benefit to vocational-technical education of such cooperation was recognized years ago by the 1973 SBCC Master Plan for Community Colleges as follows (from the SBCC articulation report of 1984):

> Close coordination with local high schools in the development and expansion of occupational offerings will result in an upgrade of occupational education for both the schools and the community colleges. Coordination will also result in more varied levels of entry into community college occupational programs. It is recommended, therefore, that community colleges take positive action to develop coordinated programs with those offered in the secondary schools.

Yet, nearly 15 years later, our survey shows overwhelming agreement among community college and school district vocational-technical program administrators that existing articulation arrangements are not adequate to meet the needs of students in these programs. That view was stated by 66.4 percent of the respondents, 71.4 percent of community college deans and 61.1 percent of school district directors of vocational-technical education.

Our survey shows even stronger support among these administrators for "joint development of planned, sequential, integrated instructional programs spanning the 11th grade in high school through the second year in community college that would closely link secondary and post-secondary vocational-technical/occupational education programs and

institutions." Eighty-two percent favored such joint development, (81.0% of community college deans and 83.3% of school district directors). Two-thirds of those favoring these arrangements (65.6%) termed them "highly desirable."

Study Methodology

Two methods of inquiry were used in this study. First, a questionnaire was developed to be sent to the Director or Coordinator of Vocational-Technical Education in each of the 24 local educational agencies (LEAs) as well as to both the Dean for Occupational Education and the Dean for Continuing Education or the Dean for Instruction at each of 17 community colleges (CC) within the state. Initial mailing of the questionnaires took place during Spring, 1985. This mailing was subsequently followed up by telephone and mail requests for completed responses. The final sample is composed of 40 completed questionnaires, 22 community college responses and 18 (of a possible total of 24) from the LEAs. The 22 community college responses represent all 17 community colleges within the state, and while the number of returned questionnaires is only 65% of those requested from the community colleges, in many cases two or three respondents from a single community college pooled their responses or the Dean to whom the questionnaire was addressed fulfills

multiple functions on his respective campus. Accordingly, the response rate is considered adequate for analysis.

The second portion of the study consisted of the conduct of personal interviews of a number of individuals concerned with vocational-technical education programs by the principle investigator of the study. These interviews include: the Directors of six JTPA Private Industry Councils (PICS) covering seven areas targeted for closer study (Baltimore City and Allegany, Baltimore, Charles, Dorchester, Prince George's, and Washington Counties); community college and secondary school personnel working in vocational-technical education; administrative personnel of Baltimore County's Eastside Occupational Training Center and the Maryland Rehabilitation Center; State Job Service officials; an official and a field representative of the Maryland Apprenticeship and Training Council; the Director and staff members of the Division of Vocational-Technical Education in the State Department of Education; the Associate Executive Director of the State Board for Community Colleges; and the Executive Director and Associate Director of the State Advisory Council on Vocational-Technical Education, among others. The personal interviews and site visits were conducted on an informal basis and proved to be extremely informative.

Analyses of responses to the questionnaire were conducted separating the responses by type of respondent [community college (CC) or local education agency (LEA)] and are detailed throughout the text. Analysis was done further separating the sample by type of respondent and locality [county and/or Service Delivery Area (SDA) subdivision (See Table 1)]. However, small cell sizes preclude discussion of reliable statistical results of this analysis, while providing some interesting insight into within-jurisdiction issues.

The final sample was composed of 40 persons, representing all 10 SDAs and 22 of 24 county government jurisdictions. Only Caroline and Somerset counties were unrepresented in the sample at all since the LEA did not respond to the questionnaire and there is no community college located within the county division lines. The number of responses from each SDA and county are detailed in Table 2.

Responses were received from 37 males and three females, indicating a male dominated vocational-technical education system. No LEA respondent was female. While this is neither unexpected, nor necessarily a negative result, it is seen as interesting in that many of the subject areas that are implemented are considered "feminine" vocations, such as office education, data processing, secretarial science, and the like. Interestingly, it is in these areas that most

localities indicated that programs are most likely to be linked and/or are planned for future articulation.

Current Status of Articulation

The 1984 SBCC study found three "General Policy Agreements" between three community colleges (Allegany, Chesapeake, and Hagerstown) and school districts served by them, 22 "Program Letters of Agreement" between six community colleges and school districts in 13 different subject areas (three of them academic), and 11 Letters of Agreement being negotiated by six community colleges in ten vocational-technical subject areas (of which five areas were not previously included in Letters of Agreement). In the Spring of 1984, eight of our 17 community colleges had in place or were negotiating Letters of Agreement with boards of education for some form of articulation of between one and six instructional programs in a total of 15 vocational-technical subject areas. In addition, the Community College of Baltimore was negotiating an agreement in the field of "Arts and Sciences" and Hagerstown Junior College had in place agreements covering biology, English, and languages (as well as three vocational-technical programs).

The study shows that there has been some additional progress since then. Eleven community colleges report permitting high school students to take vocation-technical courses at college; deans in nine community colleges report having formal policy statements between their board and the school boards; and deans in nine colleges report having formal program letters of agreement between boards. While the majority of respondents report that students can receive advanced placement college credit by examination, it is less certain that students are able to receive advanced placement credit by examination for specific high school courses. While this distinction may seem somewhat hazy, it would seem to suggest that course work taken in high school that might not be of a strictly academic nature is less likely to receive acceptance at the community college level. Such might be the case of vocational-technical coursework or training that would be considered the reason for articulation agreements. These results, however, as shown in Tables 3 and 4, are somewhat marred by the failure of agreement in a number of cases between the college deans and the high school directors serving the same counties, and in some cases by lack of agreement between deans in the same college, with respect to whether particular arrangements existed. These disagreements were found with respect to each of the eight forms of articulation listed in our questionnaire and

demonstrate a misunderstanding or lack of communication, or both, between high school and community college program administrators. One of the findings of this study is that inadequate communication among program administrators and others regarding common programs and problems is a major cause of delayed progress toward adequate program articulation and of inadequate linkages between related programs.

Importantly, our study shows increased interest and activity in program articulation. Twenty-one of the 38 respondents to a question about a change in articulation activities during the previous two years (1983-1984), representing 12 community colleges and eight school districts, reported changes in such articulation, and 27 of 39 respondents (from 16 community colleges and nine school districts) indicated they expected further changes over the next two years.

Additionally, and of great importance to the articulation effort, the majority of respondents did not view existing articulation activities as adequate to meet the needs of the State's vocational-technical students (see Table 6). A significant majority did indicate that the joint development of a planned, sequential, and integrated program is not only needed, but is also desirable. We conclude from our study that progress toward close articula-

tion will become more rapid when program administrators can be brought together to work on it.

Table 7 details the evaluation of 15 program subject areas for suitability for comprehensive "2 plus 2" articulation. The results demonstrate that respondents rated suitability of the 15 subject-areas for close articulation as follows, in descending order: data processing, office education, electronics, computer technology, drafting*, secretarial science*, business, automotive technology*, electrical engineering technology*, nursing*, heating/air conditioning, construction*, industrial electricity*, media technology, parks management (* denotes tie).

Another question was designed to find out the extent of close articulation of programs we have in place or planned for these 15 subject areas. Table 8 details the results of this question. The leading subjects in terms of the number of respondents reporting programs currently articulated were: electronics (16), business (14), data processing (14), office education (12), and secretarial science (12). Areas of greatest planned growth in articulation appear to be data processing, drafting, office education, and secretarial science. These 15 subject areas were chosen because they were the ones the SBCC report indicated as subject to Program Letters of Agreement in place, or that were being negotiated as of Spring 1984. Others, such as food service, commercial

art, and retailing were mentioned by respondents as suitable for articulation.

Table 9 reports the response to this question detailed by jurisdiction. Several important points emerged from these data. First, there is a great diversity across the State as to those programs utilized for articulation agreements. This diversity should be viewed as a positive outcome, indicative of local responses to local needs and services, and resource availability. Second, and less positive, is the reported differences between the CC's and LEA's as to the programs for which there is a current or planned articulation agreement. For example, in the program area of automobile technology, a Baltimore County CC reports a current agreement while the LEA respondent did not. Conversely, the LEA reports a planned program, but CC respondents don't. Similar results can be noted for many jurisdictions through the State, indicating, again, some degree of lack of communication between participants in the articulation process.

If we were to cite one area of the State as a model for working toward optimum articulation of vocational-technical programs, it would be Washington County, where they began to work on the problem as part of an overall economic development effort. Perceived economic necessity often is the most effective spur to such progress. There is a formal articulation agreement between the Washington County Board of

Education, MSDE's Vocational Education office, and Hagerstown Junior College that provides for the instructional staffs to work together to identify overlapping and duplication of instructional programs. There is provision for early release of high school students on a part-time or full-time basis for work at the college in approved programs, and high school students may be awarded advanced placement or college credits based on the student's experience. The agreement covers the "nuts and bolts" of arrangements, such as the selection of students to participate, financial arrangements, transportation, faculty cooperation, sharing of faculty, and the identification of program subject-areas for articulation. Individual Program Letters of Agreement are then developed for the programs to be articulated and, upon approval, are incorporated by reference in the basic formal agreement. While the relationship between the school district and the junior college is still developing, the program administrators in Washington County regard what they have as a strong beginning rather than the ultimate product of cooperation. What has been accomplished in such a short time is impressive.

As of the Spring of 1984, SBCC reported six program letters of agreement in Washington County, three each in academic and vocational-technical subjects. In our survey, Dr. A. Thomas Oyster, Supervisor of Vocational Education for

the Washington County Public Schools, reports working agreements in seven vocational-technical education program areas, with six others in the planning stage.

This is very substantial progress in one year. Two notable aspects of the Washington County articulation agreement are: first, that it was developed as part of a broader economic redevelopment program for the county in recognition of the close relationship between educational excellence and responsiveness and an attractive climate for industry; and, second, that it involves a working relationship between high school and college instructional staffs. The first point has obvious implications for our entire state and is overdue recognition of the importance of vocation-technical education both to economic progress and to excellence in education. The second point is crucial to developing genuine program articulation and a feeling of equal partnership in serving the needs of students and of the broader community.

Moving Toward Articulated Programs

Our survey clearly shows that most administrators of school and college vocation-technical education programs regard current articulation agreements as inadequate and would like to move on to more fully articulated secondary/postsecondary programs. Yet, both the responses to the

questionnaire and personal interviews with a wide range of individuals involved in vocational-technical education make it equally clear that progress is slow. In our judgement, and that of a good many other observers, it is much too slow in meeting obvious needs to strengthen vocational-technical education.

This finding raises the issue of why there has not been more accomplished to meet needs that have been publicly recognized for well over a decade. Our purpose in this report is not to assess blame but rather to discover impediments to making the most effective use of education and training resources, and, where possible, to suggest how these might be overcome.

Program articulation is basically a mechanical process, one involving staff time and some additional funding, and most likely, making some difficult decisions about the kind of changes in instructional programs required to bring it about. It isn't an easy process, but it nevertheless, essentially, is mechanical. The obstacles to achieving better articulation are, conversely, attitudinal. To the extent that secondary/postsecondary program articulation is a mechanical process, it is very unlike the problem of achieving closer linkages between a variety of related programs - the second object of this study - which is largely conceptual. Articulation of instructional programs and

linkages between education, job training, and related programs have this in common: neither will occur to any appreciable extent unless there is firm and continuing leadership by policy makers at both State and local levels.

The principal obstacles to satisfactory progress in vocational-technical education program articulation are apathy on the part of some school and college administrators, a pervasive concern over "turf" by educators in both school and community college systems, failures of communication between program administrators, and a lack of perceived aggressive leadership from the State agencies responsible for the two systems. This conclusion is amply supported by the responses of the program administrators to our questionnaire, by personal interviews with individuals who are well informed on the status of vocational-technical education in our State, and by the evidence of the progress of program articulation, which speaks for itself.

Many of the open-ended questionnaire responses from program administrators cited lack of communication between the systems, concerns about "turf," and apathy as problems. These tended to come out stronger, yet, in personal interviews. The Director of Vocational-Technical Education for one of our largest school districts told us that "when [the community college occupational education dean] and I get together, we often say `we have to talk about program

articulation sometime,' but we never seem to get around to it." There is little real articulation of vocational-technical programs offered by that district and the community college.

"Turfdom" takes many forms: bickering over the right to run vocational programs for adults (community colleges tend to claim proprietary rights therein, with accompanying counts of Full-Time Equivalent students - "FTEs" - that generate State-aid payments); refusal or inability to share facilities, equipment, or staff; high schools unwilling to release students and give credit toward graduation for courses at the community college; community colleges unwilling to credit high school vocation-technical courses (or giving credits and charging for them as though the course were taken at the college); and so forth. In at least one county that is encountering severe economic problems, the relationship between the school district and the community college in vocational-technical education can only be described as downright hostile.

Program articulation requires close communication between program administrators, which in many cases appears to be lacking, as we have previously noted. It should also involve cooperation between high school and community college instructional staffs. Some high school vocational-technical personnel feel that community college instructors unfairly

depreciate the high school programs, which is the kind of irritant that blocks communication. These barriers tend to dissolve as individuals come to know one another and work together on common problems. On the other hand, in one county the community college deans strongly favors a full-fledged "2 + 2" articulation of at least nine programs, but cites the "unwillingness of public school [officials] to discuss/implement" as the major obstacle in achieving it.

Additional staff time and some additional funding are critical needs in program articulation, and are most frequently cited as obstacles by both high school and community college administrators. But without changed attitudes and vigorous leadership, it is difficult to see how the process can be implemented more quickly as most observers believe it should be.

The issue of leadership is a touchy one. The State Advisory Council on Vocational-Technical Education, for example, has mentioned the subject of articulation in four or five of its 17 annual reports, but never really highlighted it. One person familiar with the work of the Council over a number of years expressed the view that the Council - which is widely regarded as one of the best in the nation - had approached the issue of secondary/postsecondary program articulation so gingerly "because it drives the State agencies right up the wall; they are almost paranoid on the

subject." Oddly, the Council has made very forceful recommendations in areas, such as the overall State governance of vocational-technical education, that on the surface would appear far more sensitive.

Both SBCC and the State Department of Education may be concerned, and rightly so, over heavy-handed interference with local school districts and community colleges. Local control of education is a valued and valuable Maryland tradition, but such interference is not required in exerting more leadership. The 1984 SBCC report on articulation, useful as it was in describing program articulation activities and emphasizing the value of such efforts, and even while noting that "there is much more that can be done in this area," did not suggest specific State actions to accomplish this goal.

Since that report was issued, and after circulation in August of 1985 of a preliminary draft of this report covering only the topic of program articulation, the SBCC and the State Department of Education jointly sponsored a statewide meeting of school superintendents and community college presidents, in November of 1985, to discuss program articulation and to plan additional meetings of administrators and faculty members in the two systems to work on program articulation. This is the kind of effort we specifically

recommended in our preliminary draft of this report, and it is very encouraging.

It is not that, until 1984-85, State agencies had shown no interest in the subject. As we have noted, SBCC included vocational-technical program articulation in its State Master Plan for Community Colleges as early as 1973. Between then and 1980 it made a number of grants to community colleges to support the development of articulation activities.

The State Department of Education, through its Division of Vocational technical Education (DVTE), has provided more recent stimulus for the development of "2 plus 2" articulation in high technology vocational-technical programs. Using Federal Vocational Education Act funds, it provided a total of about $125,000 in grants to five county systems in FY 1985 (Baltimore, Frederick, Howard, Prince Georges, and Washington counties) with additional funding planned for FY 1986 and 1987. DVTE program reviews of vocational-technical education frequently recommend additional action by local districts to improve articulation.

These initiatives are important, but fall short of the vigorous and sustained leadership needed to bring about genuine statewide articulation of a broad range of vocational-technical instructional programs suitable for such treatment. Our study shows a tendency among educators - one certainly not confined to education, but common in

many large enterprises - toward isolation between people who should be working closely together toward a common goal. It also shows a strong desire among program administrators to bring about improvements; policy makers must provide leadership in building upon that desire.

Effective State leadership need not - and if it is really effective probably could not - infringe unduly upon the independence of community college boards and boards of education that ensures the flexibility to respond to local needs and conditions, as well as accountability to local taxpayers and citizens. State funds (and State-managed Federal funds) provide a substantial portion of operating costs of both community colleges and local school districts, and specifically for their vocational-technical programs. Moreover, the State of Maryland has the constitutional responsibility for public education, which it exercises through State agencies as well as local school boards and community college boards.

The preliminary report on program articulation contained the following paragraph setting forth specific recommendations:

> We urgently need aggressive leadership at the State level to move meaningful program articulation forward. This does not mean - and only as a last resort should it require - the use of State funding as a means to force compliance with what SBCC chooses to call a single "best way" of achieving articulation, or the use of State funding as a club to force some progress. It

> could begin with a strong joint statement by the Department of Education and the State Board for Community Colleges, prescribing a minimal acceptable effort at articulation be commenced immediately and setting forth specific goals to be achieved with specified time periods. It could be augmented by a statewide conference of vocational-technical/occupational education program administrators to discuss the "nuts and bolts" of implementing plans for articulation. It could be assisted by the provision of technical assistance by State agency personnel and/or education consultants expert in the field (e.g., the National Center for Research in Vocational Education can offer expert advice on many such problems). One simple and sensible step would be to utilize a single, common craft or program advisory committee in subject areas in which the high schools and the community college have programs. There is a lot of experience and many resources to draw upon, both inside and outside Maryland, if the education leadership will only do it.

Whether the November, 1985, meeting of community college presidents and school superintendents on articulation was, in part, a response to these recommendations is not important; the fact of the meeting is extremely encouraging, and vigorous follow-up meetings of program administrators and instructional staffs should produce real progress in the rate and intensity of program articulation.

The written response of the State Superintendent of Education to our preliminary draft report were less encouraging. He said, in effect, that program articulation is not a particularly high priority. We did not interview Mr. Hornbeck, nor DET Secretary Johnson, as we confined personal interviews to operational level personnel in those

two agencies - so we cannot speak directly to his priorities. But we assume that the improvement of vocational-technical education in Maryland must be reasonably high among them, and, accordingly, would urge the State Superintendent to review his priorities in light of expert opinion on the importance of secondary-postsecondary program articulation to such improvement. We did not undertake this study because we viewed program articulation, a priori, as a critical issue, but because the Governor's Employment and Training Council regarded it as such. The study confirms that view.

Accordingly, we would urge that articulation of vocational-technical education programs not be permitted to languish because of educational rivalries or be left purely to local initiatives. We suggest not only increased State leadership, but that the use of discretionary state and federal funds, where appropriate, be used to assist this process. We further recommend that if institutional and school district resources and funds prove insufficient to bring about adequate program articulation - and this should be proven rather than assumed - then the responsible State agencies should join in seeking categorical funding from the General Assembly to augment those resources.

PART III

Linkages Between Vocational-Technical Education, Job Training, and Supporting Programs

Focus and Limitations of Linkages Study

The establishment and maintenance of close linkages between all programs designed to prepare people for employment, and with supportive information and other service programs, is vital not only to the success of those programs, but also to ensuring a smooth, connected, and more effective flow of services to client populations. At the same time, program linkage is far less discrete than secondary/postsecondary articulation, which, as we have observed, is mostly a matter of working out the mechanics once there is the determination to do it.

Linkages between programs, on the other hand, (with some obvious exceptions, such as the mechanics of an Occupational Information System) mostly involve day-to-day working relationships between program administrators and operational personnel at all levels, and not all programs need to have the same degree of involvement (e.g., special education of handicapped children is more closely involved with elementary and secondary education, and with vocational rehabilitation, than with postsecondary education).

Our study was too limited in time and resources to attempt a comprehensive review of all the programs that are or ought to be linked with vocational-technical education and job training. Accordingly, we concentrated on seeking the views of vocational-technical education program administrators and (through personal interviews) of Directors of JTPA Private Industry Councils in selected target areas, a number of State officials and other administrative and instructional personnel. We were not able, for example, to go beyond the limited scope of the questionnaire in attempting to assess linkages with such important programs as corrections, juvenile services, health and mental hygiene agencies and industrial training, all of which would be worthy of further detailed study and analysis.

Perceptions of Vocational-Technical Education Administrators

One of the things we sought in the questionnaire was an overall assessment by community college personal and school district vocational-technical education directors of the status of coordination between vocational-technical, job training, and related and service programs in their areas. Table 10 summarizes their responses to this question. The consensus among these program administrators appears to be that program linkages are average to good, with room for improvement.

Respondents were also, as a preliminary to this assessment, asked to evaluate the status of linkages, program by program, in terms of their own school district or college, from two separate perspectives: (1) how close they felt the linkage should be, and (2) how close it is in practice. The responses to these questions are shown in Tables 11 and 12.

Obviously, there are variations in the response to both parts of the question caused by the different degree of relationship between a particular program and a school district as compared with a community college, but there also are significant differences among community colleges and among school districts. In some responses of community colleges or school districts there seems to be no consistent pattern with respect to a particular program. However, these responses make it possible to draw a number of conclusions that we hope will be helpful in spotting problems. The responses of community college deans and school district vo-tech directors in rating the extent of program coordination in the area they serve are very mixed with perceptions in the same county as far part as "high" or "average" coordination and "no coordination." Even community college deans from the same county or the same institution may be seen to disagree.

While the question calls for a subjective judgment based upon personal experience, and although the answers cannot be

quantified, they are none the less instructive. Vocational-technical education program administrators, as a group, believe that we have a long way to go to achieve optimal program coordination. Personal interviews during this study reinforce that judgement.

The following observations, suggestions, and criticisms, drawn from the interviews, were either repeated so often they became thematic or stated so authoritatively that they command attention.

- State agency leadership and technical assistance - and the time and attention of local administrators - is needed to develop program linkages, as well as more effective links to employers. The PIC director in one of our largest counties stressed this, saying "we need to develop linkages that aren't there ... everyone wants to do it [but] State and local leaders need to be brought together and directed to do it, and sufficient time needs to be given [to the problems]." A county school district Federal-State programs administrator in another county told us, "There are a hundred ways you could tie these things [JTPA, vocational-technical education, special education for handicapped] together better, [but it won't get done] until they [State agencies] have somebody full-time working with the County - or smaller counties could use one person on a regional basis ... maybe 20

people [in the State] developing linkages between programs and helping to cut out some of the redtape." Others made essentially the same point.

- Better labor market information, regionalized within the State and designed for several clients with somewhat differing needs (e.g., JTPA PICs; vocational- technical educators), is required for better program planning and evaluation, as well as career and job counseling. Respondents to the questionnaire tended to give the Research and Analysis Division of the Job Service, headed by Mr. Pat Arnold, high marks for materials and technical assistance. We believe these are well deserved, but the more in-depth interviews with other users of labor market information accentuate the need to strengthen and expand that operation into a fully developed Occupational Information System responsive to the needs of a variety of users, especially at the local levels. Because such a system is a basic tool in the operation of job training and vocational-technical education programs, and because its design involves and promotes program linkages, we are making more detailed recommendations on this in our report.

- Vocational-technical education programs must be more responsive to a variety of student/client needs, particularly for short-term performance-based training

designed to meet specific needs of industry and/or of JTPS eligible clients. Most observers interviewed in this study - including community college instructional personnel - felt that community colleges tend to be hesitant to adapt programs (usually on a contractual basis) to meet these needs, although several of them around the State have done so quite successfully. This is a major stumbling block in building better linkages between vocational-technical education and JTPA programs, and, in our judgment, could also be a problem in bringing Maryland's industrial training program to a level of effectiveness found in other states with which we compete for new industry.

- JTPA PICs and education and training institutions need to work out a better mutual understanding of their respective roles and responsibilities in effectively meeting the varied needs of JTPA clients, and both should work as closely as possible with the Maryland Job Service Agency. A major feature of JTPA is performance standards (as set forth in regulations promulgated pursuant to section 106 of the Act) that place a heavy emphasis on job placement, with financial incentives for Service Delivery Areas (SDAs) in each State that exceed the standards. This is not a bad feature in the Act, but it can have unfortunate results, and it does create tensions

between SDA PICs and institutions providing job training. On one hand, the PIC sometimes feels that job training programs are needlessly extended, and, on the other, those who are doing the training often feel under pressure to move some individuals out of training and into a job at a lower level of skill (and income) than the trainee is capable of achieving. This is a problem even in the most successful programs.

Another point of friction between the PICs and the Job Service also involves placements. PICs legitimately use on-the-job training as an important part of the JTPA program. But in some instances this can cross the line into direct job placements, which is a function of the Job Service. The two agencies need to work on this and other problems between them. In some areas of the State the PIC, job training institutions, and the local Job Service offices appear to be working together well. This ought to be the case in all areas, and, this too, needs State-level leadership.

- Secondary school vocation-technical facilities often are underutilized in areas where there is the most serious need for additional facilities for job training and pre-job training remedial education for adults and out-of-school youth. This is a problem that needs serious attention by JTPA and education officials at all

levels. In some areas, school district vo-tech centers have better equipment and facilities than the community college, but cooperation between the two in making full utilization of such centers too often is inadequate or nonexistent. There are problems in scheduling programs for adults in facilities used for high school students during regular school hours, but these could be worked out. Sometimes there is no real attempt at cooperation; in one county that needs to make the best possible use of every resource the school district charged the community college what appeared to be an exorbitant rental fee for the after-hours use of a vo-tech facility for adults, with the result that such use was not continued. In any event, we need, in every case, to be making the fullest possible use of facilities paid for by taxpayers, and that appears to be far from the case at present.

- Counseling and screening of JTPA eligibles often is inadequate. Clients are sometimes assigned to training courses for which they lack requisite basic education skills; in some cases, displaced and unemployed workers are not made aware of training opportunities until unemployment insurance payments are exhausted. Local Job Service offices, PICs, and job training personnel need to work more closely together on these problems. It is true that many unemployed workers receiving unemployment

insurance payments are waiting to be recalled to jobs and have no reason to be in training programs, but often this is not the case. Job Service personnel generally are carrying workloads too heavy to permit much individual counseling, but group counseling during the first day of application for unemployment payments is entirely feasible and could include a thorough explanation of training opportunities. Screening of JTPA eligibles for readiness for particular training programs largely will remain the job of the PIC personnel, working with training personnel. This is vital to the individual trainee and to the success of a training program. Pre-training remedial education often is necessary, even though it prolongs the process and lowers initial job placement rates. Most training personnel feel that are more attention needs to be given to the problem of remediableness, and particularly when the trainees are long-term unemployed who are educationally disadvantaged.

- <u>There should be a firm linkage between special education programs in high schools and the vocational rehabilitation program</u>. Rehabilitation personnel frequently see out-of-school handicapped youth only after the student's parents have been searching for one or two years for suitable vocational training for them. This problem might be solved through counseling of high school special

education students and their parents concerning the availability of the facilities and resources of the Vocational Rehabilitation Program; the two responsible State agencies should start to work on this at once.

- We need to be more aware of the excellent opportunities for vocational-technical education for well-paid jobs and careers offered through apprenticeship programs. The apprenticeship program is a true blend of on-the-job training and related classroom instruction in educational institutions, administered through Federal and State agencies (in Maryland by the Apprenticeship and Training Council in the Department of Employment and Training), and financed largely by employers.

The Need for a Better Utilized Apprenticeship Program

Although nationally, as well as in Maryland, well over half of all registered apprentices are in the construction trades, registered programs offer apprenticeships in more than 700 occupations (currently in about 126 occupations in Maryland). As of January 25, 1985, our State had 280 currently active programs (of a total of 624 apprenticeship programs registered in the State) with 4,648 registered apprentices. The apprenticeship program has been termed quite aptly "one of our best kept secrets... a silent success."

The point we would like to make here, and very emphatically, is that Marylanders working with this program independently state that the program easily could be doubled in Maryland, given better support, and the kind of promotion and visibility it merits. Maryland ranks 25th among the states in support for apprenticeship programs. The work of field representatives, in particular, is crucial in expanding the program and should be strengthened, and the respective roles of Federal and State apprenticeship personnel within the State more clearly defined and better coordinated.

"Related instruction" in apprenticeship programs (usually at least 144 hours per year) may be provided by local school districts or community colleges (as in Maryland) and for community colleges can be a source of additional revenue generated through FTEs (three apprentices equal one FTE enrollment). All 17 community colleges participate in the apprenticeship program, but some to a much larger extent than others. The extent of participation depends, in part, on the area served and the size of and need for the apprenticeship program in that area. On our questionnaire we deliberately omitted the apprenticeship program from the list of programs for which we asked vocational-technical administrators the degree of existing coordination and the degree of desired coordination with their colleges or school districts, but left room to specify a program we had not

listed as a sort of test of the view that apprenticeship programs are overlooked. That may not be a particularly "scientific" method, but it is interesting that only one of the 40 respondents wrote in "Apprenticeship" as an "other" program with which there is or should be some degree of coordination.

We need to examine the apprenticeship program with a view towards expansion of those apprenticeable occupations for which there will be increased employment demand and opportunities.

The Need for an Occupational Information System

Since 1976, States have received Federal financial assistance under the Vocational Education Act and CETA/JTPA to establish and operate an Occupational Information System (OIS) that pulls together labor market supply and demand information, demographic information, and other relevant data for use by vocational-technical education and employment training program planners, employment and education counseling and guidance, vocational rehabilitation and economic development agency personnel, among others. To qualify for assistance under those federal acts, each State was required to establish an inter-agency entity called the State Occupational Information Coordinating Committee (SOICC) composed of representatives of the major State agencies responsible for

education, training, and other programs using and/or producing occupational information, charged with the responsibility for the operation of an OIS. The national system is run by a Federal inter-agency entity, NOICC.

The SOICC is required to have representatives of the State agency that administers vocational education, the vocational rehabilitation agency, the Governor's council established under JTPA, the State Job Service, and the State economic development agency. A State may, and many do, add additional members. The basic task of the SOICC - to ensure that the State has an effective OIS accessible to everyone in the State who needs such information - is one of fundamental importance to education, job training, career planning, and economic development. The accessory value of an active, fully functioning SOICC is that bringing these agencies together for a common purpose promotes better program linkages across the board.

That has been the experience in many other States, but Maryland has never really had an active, fully functioning SOICC, and it does not have an OIS of a quality comparable to that of many other States, including States with which we compete for new industry. This bleak conclusion is not based on this study (although this study certainly supports the view that Maryland needs to make more effective use of labor market information), but on a 1984 study conducted for

NOICC by the senior project manager, and on NOICC administrative reports through October 1985.

In 1985, according to NOICC reports, Maryland was one of only 12 states that is not implementing or have in actual operation a computerized OIS. The State does have a computerized Career Information Delivery System (CIDS) called "VIEW" that reportedly is available in 380 locations around the State, but our impression is that it is somewhat neglected. One of the functions of a good SOICC is to promote statewide interaction between producers and user of labor market information. Virginia, for example, conducts an annual conference of State agency and local education and training personnel on the development and use of the OIS and CIDS. This give and take involvement of information producers and users on a regular basis often results in information materials especially tailored to the needs of specific kinds of users, and ensures that everyone who needs the system not only has access to it, but understands how to use the information effectively. It is not enough simply to develop on OIS with effective methods of presentation and leave it to the local user to implement its use. A good system is regularly updated and revised, and new users regularly come along, all of which requires training of users on a regular basis.

DET Secretary Brent Johnson is very much aware of the need for an active SOICC in Maryland and is committed to the development of a first-rate occupational information system. NOICC, the U.S. Department of Labor, and the national Governors' Conference are working together to provide better technical assistance to SOICCs in the development and use of an OIS. We urge the Secretary and the Governor's Employment and Training Council to take the initiative in revitalizing the SOICC and seeing that it moves forward expeditiously to implement the best possible OIS for our State.

PART IV

Recommendations

We have attempted to emphasize that effective program linkages are more a matter of building good working relationships among and between program personnel than of building administrative structures. We believe that the kinds of action we are recommending and many similar additional ones that undoubtedly will be needed, cannot be implemented effectively without determined, continuing, State-level leadership and assistance from the agencies and individuals responsible for the administration of these programs. With such leadership from the top, a sense of the value of working together can begin to permeate these activities, giving the total effort a coherence and strength that could be an incalculable benefit to the people of Maryland.

Our recommendations are as follows:

1. The initiative begun in November, 1985, to bring together Boards of Education and Community College Boards to lay the groundwork for better program articulation should be vigorously followed up with meetings between program administrators and instructional staffs of the two systems.

2. In every area of the State there should be formal agreements between boards of education and the board of the community college serving the area providing for articulation

of vocational-technical education instructional programs, implemented through specific program agreements worked out jointly by program administrators and instructional staffs, and designed to bring about the highest desireable level of articulation for programs conducted both in high schools and community colleges.

3. State funds (and State-controlled federal funds) for vocational-technical education should be used to encourage and promote better program articulation, other program linkages, and better utilization of all vocational-technical education/job training facilities; the Department of Education, the State Board for Community Colleges, and the Department of Employment and Training should assign a high priority to such activities.

4. Each of our 17 public community colleges should give priority attention to developing or improving its capacity to respond to needs for relatively short-term, performance-based, job training programs for JTPA PICs and private industry; there needs to be a thorough reexamination of how under-utilized vocational-technical facilities of school districts can be better employed in these programs and meshed with community college facilities.

5. The State Department of Education should consider assigning full or part-time personnel to assist school district vocational-technical education administrators (and others)

to more effectively link their programs with other State and Federally-supported programs for the handicapped, the disadvantaged, and other special populations and purposes, and to reduce paperwork and administrative duplication.

6. JTPA PICs, the Job Service, and education and training agencies and institutions should make a concerted effort to sort out their respective responsibilities and roles in job counseling and placement and to work more in concert; PIC directors and job training personnel need to work together more closely (and more candidly) to strike a balance between job placement and training that ensures for individual trainees a realistic assessment of the advantage of quick placement vs. additional training.

7. The Department of Employment and Training (in cooperation with the Department of Education, SBCC, and State economic development agencies) should act to establish (in accordance with Federal acts) an effective State Occupational Information Coordinating Committee to develop and maintain a state-of-the-art occupational information system, with labor market information for sub-state areas, which includes a comprehensive career information system accessible to all users and run by people trained in its use.

8. Special education for handicapped students in elementary and secondary schools should have closer links to the vocational rehabilitation program, especially in counseling

such students and their parents about the availability and capabilities of vocational rehabilitation programs.

9. Apprenticeship programs should be utilized to their fullest capacity and potential, with the goal of substantially increasing the number of active programs (particularly in high-demand occupations in which existing programs are not concentrated) and doubling the number of registered apprentices to 9,000 or more over the next few years.

10. Much more attention needs to be given to improving linkages and cooperation between school and college vocational-technical education and juvenile services, correctional institutions, health and mental hygiene agencies, the Job Service, post-secondary vocational schools, and other agencies and institutions involved in providing preparation for employment or supportive services, as suggested by the responses of school and college program administrators of vocational-technical programs.

11. State officials should take a closer look at our industrial training program (which we did not attempt to do in this study) to see how it compares with similar programs with which Maryland competes for industrial development, and to determine whether it might be strengthened by linking it more closely to vocational-technical education.

TABLES

Table 1

Details of Sample Size, Location and Agency

County	Community College	Responses Received By CC	Responses Received By LEA
Allegany	Allegany	x	x
Anne Arundel	Anne Arundel	xx	x
Baltimore City	Baltimore City (CCB)	x	
Baltimore County	Baltimore County		x
	Catonsville	x	
	Dundalk	xx	
	Essex	x	
Calvert	(Charles CC)		x
Caroline	(Chesapeake CC)		
Carroll			x
Cecil	Cecil	x	x
Charles	Charles	x	
Dorchester	(Chesapeake CC)		x
Frederick	Frederick	x	x
Garrett	Garrett	xx	x
Harford	Harford	x	x
Howard	Howard	xx	x
Kent	(Chesapeake CC)		x
Montgomery	Montgomery	x	x
Prince George's	Prince George's	x	x
Queen Anne's	(Chesapeake CC)	x	
Somerset	(Wor-Wic CC)		
St. Mary's	(Charles CC)		x
Talbot	(Chesapeake CC)		x
Washington	(Hagerstown CC)	xx	x
Wicomico	(Wor-Wic CC)	x	
Worcester	(Wor-Wic CC)		x
	N =	22	18

Table 2

Response Frequency by Service Delivery Area
and County Jurisdiction

County	Frequency
Allegany	2
Anne Arundel	3
Baltimore City	1
Baltimore County	5
Calvert	1
Carroll	1
Cecil	2
Charles	1
Dorchester	1
Frederick	2
Garrett	3
Harford	2
Howard	3
Kent	1
Montgomery	2
Prince George's	2
Queen Anne's	1
St. Mary's	1
Talbot	1
Washington	3
Wicomico	1
Worcester	1

Service Delivery Area	Frequency
Baltimore Consortium	8
Baltimore County	5
Frederick	2
Lower Shore	2
Montgomery	2
Prince George's	2
Susquehana	4
Southern Maryland	3
Upper Shore	4
Western Maryland	8

Table 3

Frequency of Positive Responses to Question Detailing Current Articulation Activity Use

	Community College	Local Education Agency	TOTAL
1. H.S. students in academic Comminity College courses	20	12	32
2. H.S. students in vocational/technical Community College courses	19	10	29
3. Credit by local examination for AP and/or college credit	21	12	33
4. Credit by local examination for H.S. courses for AP and/or college credit	13	7	20
5. Use of national AP examinations from College Board	12	6	18
6. Use of national CLEP examinations	22	7	29
7. Formal policy statement agreements between boards	10	7	17
8. Formal letters of agreement between boards	11	9	20

Table 4

Secondary/Post Secondary Articulation Strategies Reported in Current Use in Maryland

County	Community College	H.S. students in academic Community College courses		H.S. students in vocational technical Community College courses		Credit by local examination for AP and/or college credit		Credit by local examination for H.S. courses for AP and/or college credit		Use of national AP examinations from College Board		Use of national CLEP examinations		Formal policy statement agreements between boards		Formal letters of agreement between boards	
		CC	LEA	CC	LEA	CC	LEA	CC	LEA	CC	LEA	CC	LEA	CC	LEA	CC	LEA
Allegany	Allegany	x		x	x	x	x	x		x		x	x	x			
Anne Arundel	Anne Arundel	x	x	x		x		x,-	x	x,-		x	x	x,-	x	x,-	
Baltimore City	Baltimore City (CCB)	x		x		x						x		x			
Baltimore County	Baltimore County		x		x		x		x		x		x		x		x
	Catonsville	x		x		x		x		x		x		x		x	
	Essex	x		x		x		x		x		x					
	Dundalk	x,-		x,-		x		x		x,-		x				x	
Calvert	(Charles CC)																x
Caroline	(Chesapeake CC)																
Carroll			x								x						
Cecil	Cecil	x			x	x	x			x		x			x		x
Charles	Charles	x		x		x						x		x		x	
Dorchester	(Chesapeake CC)						x								x		x
Frederick	Frederick	x		x		x	x	x		x	x	x		x		x	x
Garrett	Garrett	x	x	x	x	x,-	x	x,-	x			x					
Harford	Harford	x	x	x	x	x	x		x		x	x	x		x	x	x
Howard	Howard	x	x	x	x	x	x	x		x,-		x				x,-	x
Kent	(Chesapeake CC)		x		x		x		x								
Montgomery	Montgomery	x	x	x		x	x	x		x	x	x	x	x		x	
Prince George's	Prince George's	x	x	x	x	x				x		x			x		
Queen Anne's	(Chesapeake CC)	x		x		x						x		x		x	
Somerset	(Wor-Wic CC)																
St. Mary's	(Charles CC)		x		x		x				x		x				x
Talbot	(Chesapeake CC)		x		x				x				x				
Washington	(Hagerstown CC)	x	x	x	x	x	x	x	x	x		x		x	x	x,-	x
Wicomico	(Wor-Wic CC)					x						x					
Worcester																	

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Table 5

Community College Response Frequency to Questions Regarding Articulation Activities and Adequacy

	Community College Articulation Change in Last Two Years		Community College Articulation Change in Next Two Years		Comm. College Articulation Adequate	
	Yes	No	Yes	No	Yes	No
Allegany	1		1			1
Anne Arundel	1	1	1	1		2
Baltimore City (CCB)	1		1			1
Baltimore County						
Catonsville	1		1			1
Essex		1	1			1
Dundalk	1	1	2			2
Charles	1		1		1	
Cecil		1	1		1	
Frederick	1		1		1	
Garrett		2		2	2	
Harford		1	1			1
Howard	1	1	1	1		-
Montgomery	1		1			1
Prince George's	1		1			1
Queen Anne's (Chesapeake)	1		1			1
Washington (Hagerstown)	2		2		1	1
Worcester (Wor-Wic)			1			1

Table 6

Frequency of Responses to Selected Questions Regarding Articulation by Community College and Local Education Agency Respondents

	Yes		No	
	CC	LEA	CC	LEA
Use of articulation activities has changed within the last two years.	13	8	8	9
Change is anticipated in use of articulation activities within the next two years.	18	9	4	8
Existing high school-community college articulation arrangements are adequate to meet the needs of vocational-technical/ vocational education students.	6	7	15	11
Joint development of planned sequential, integrated instructional programs spanning the 11th grade in high school through the second year in a community college is needed.	17	15	4	3
Joint development is:				
Highly desireable	12	9	-	-
Somewhat desireable	3	4	-	-
Desireable	2	3	-	-

Table 7

Rating of Suitability of Selected Programs for Articulation Activities by CC and LEA Respondents

	Very Suitable		Somewhat Suitable		Unsuitable	
	CC	LEA	CC	LEA	CC	LEA
Automotive Technology	9	10	7	2	3	3
Business	12	13	8	4	1	1
Computer Technology	17	11	4	4	-	-
Construction	7	5	9	7	3	3
Data Processing	18	15	3	2	-	1
Drafting	13	14	7	-	1	1
Electronics	17	12	4	-	-	2
Electrical Engineering Technology	10	9	7	4	2	2
Heating/Air Conditioning	7	10	9	4	2	2
Industrial Electricity	5	7	12	5	1	1
Media Technology	6	3	10	8	1	2
Nursing	7	12	10	4	4	-
Office Education	18	14	2	4	-	-
Parks Management	4	4	11	1	1	7
Secretarial Science	18	9	3	7	-	-

Table 8

Current and Planned Coordination of Activities for Selected Programs by CC and LEA Respondents

	Current		Planned	
	CC	LEA	CC	LEA
Automotive Technology	2	2	1	3
Business	7	7	3	4
Computer Technology	7	3	6	2
Construction	5	2	4	1
Data Processing	7	7	10	4
Drafting	4	4	7	3
Electronics	9	7	6	2
Electrical Engineering Technology	5	1	2	1
Heating/Air Conditioning	4	1	1	1
Industrial Electricity	1	-	2	-
Media Technology	3	-	2	1
Nursing	6	3	1	4
Office Education	7	5	6	4
Parks Management	1	1	-	-
Secretarial Science	9	3	8	3

Table 9

Current and Planned Coordination of Activities for Selected Programs by Community College and Local Education Agency by Jurisdiction

Type of program: Automotive Technology

	Current		Planned	
	CC	LEA	CC	LEA
Baltimore City	1	-	-	-
Baltimore County	1	-	-	1
Harford	-	-	-	1
Kent	-	1	-	-
Montgomery	-	1	1	-
Washington	-	-	-	1

Type of program: Business

	Current		Planned	
	CC	LEA	CC	LEA
Allegany	-	1	-	-
Anne Arundel	1	-	1	1
Baltimore City	1	-	-	-
Baltimore County	1	1	1	-
Cecil	-	-	-	1
Charles	-	-	1	-
Dorchester	-	-	-	1
Frederick	-	1	-	-
Garrett	1	-	-	-
Harford	-	1	-	-
Howard	1	-	-	1
Kent	-	1	-	-
Montgomery	-	1	-	-
Washington	2	1	-	-

Type of program: Computer Technology

	Current		Planned	
	CC	LEA	CC	LEA
Anne Arundel	1	-	1	-
Baltimore City	1	-	-	-
Baltimore County	2	-	1	1
Cecil	-	-	1	-
Frederick	-	1	-	-
Garrett	1	-	-	-
Howard	1	1	-	-
Prince George's	1	1	-	-
Queen Anne's	-	-	1	-
Washington	-	-	2	1

Type of program: Construction

	Current		Planned	
	CC	LEA	CC	LEA
Anne Arundel	1	-	-	-
Baltimore City	1	-	-	-
Baltimore County	1	-	-	-
Cecil	-	-	1	-
Garrett	1	1	1	-
Howard	1	1	-	-
Queen Anne's	-	-	1	-
Washington	-	-	1	1

Type of program: Data Processing

	Current		Planned	
	CC	LEA	CC	LEA
Anne Arundel	1	-	1	1
Baltimore City	1	-	-	-
Baltimore County	2	-	1	1
Carroll	-	-	-	1
Cecil	-	-	1	-
Charles	-	-	1	-
Calvert	-	1	-	-
Frederick	-	1	-	-
Garrett	1	1	1	-
Harford	-	1	-	-
Howard	1	1	-	-
Montgomery	-	-	1	-
Prince George's	1	1	-	-
Queen Anne's	-	-	1	-
Kent	-	1	-	-
Washington	-	-	2	1
Wicomico	-	-	1	-

Type of program: Drafting

	Current		Planned	
	CC	LEA	CC	LEA
Anne Arundel	-	-	1	1
Baltimore City	1	-	-	-
Baltimore County	1	1	1	-
Cecil	-	-	1	1
Charles	-	-	1	-
Harford	-	-	-	1
Howard	-	-	1	-
Kent	-	1	-	-
Montgomery	-	-	1	-
Prince George's	1	1	-	-
Washington	1	1	1	-

Type of program: Electronics

	Current		Planned	
	CC	LEA	CC	LEA
Anne Arundel	1	-	1	1
Baltimore City	1	-	-	-
Baltimore County	1	1	2	-
Carroll	-	-	-	1
Cecil	-	-	1	-
Charles	-	-	1	-
Calvert	-	1	-	-
Frederick	-	1	-	-
Garrett	1	-	-	-
Howard	1	1	-	-
Montgomery	-	-	1	-
Prince George's	1	-	-	-
Queen Anne's	1	-	-	-
Dorchester	-	1	-	-
Kent	-	1	-	-
Washington	2	1	-	-

Type of program: Electrical Engineering Technology

	Current		Planned	
	CC	LEA	CC	LEA
Anne Arundel	1	-	1	-
Baltimore City	1	-	-	-
Frederick	-	-	-	1
Garrett	1	-	-	-
Howard	-	-	1	-
Washington	2	1	-	-

Type of program: Heating/Air Conditioning

	Current		Planned	
	CC	LEA	CC	LEA
Baltimore City	1	-	-	-
Baltimore County	1	1	-	-
Garrett	1	-	-	-
Washington	1	-	1	1

Type of program: Industrial Electricity

	Current		Planned	
	CC	LEA	CC	LEA
Garrett	1	-	-	-
Queen Anne's	-	-	1	-
Washington	-	-	1	-

Type of program: Media Technology

	Current		Planned	
	CC	LEA	CC	LEA
Anne Arundel	1	-	-	-
Baltimore City	1	-	-	-
Baltimore County	-	-	1	-
Garrett	1	-	-	-
Washington	-	-	1	1

Type of program: Nursing

	Current		Planned	
	CC	LEA	CC	LEA
Anne Arundel	2	-	-	1
Calvert	-	1	-	-
Cecil	-	1	1	-
Harford	-	-	-	1
Howard	1	-	-	1
Queen Anne's	1	-	-	-
Dorchester	-	-	-	1
Washington	2	1	-	-

Type of program: Office Education

	Current		Planned	
	CC	LEA	CC	LEA
Anne Arundel	2	-	-	1
Baltimore City	1	-	-	-
Baltimore County	1	1	1	-
Cecil	-	-	1	1
Charles	-	-	1	-
Frederick	-	1	-	-
Garrett	-	-	1	-
Harford	-	1	-	-
Howard	1	-	-	-
Montgomery	-	1	-	-
Prince George's	-	-	1	1
Queen Anne's	-	-	1	-
Dorchester	-	-	-	1
Washington	2	1	-	-

Type of program: Parks Management

	Current		Planned	
	CC	LEA	CC	LEA
Frederick	-	1	-	-
Garrett	1	-	-	-

Type of program: Secretarial Science

	Current		Planned	
	CC	LEA	CC	LEA
Anne Arundel	2	-	-	1
Baltimore City	1	-	-	-
Baltimore County	2	-	1	-
Calvert	-	1	-	-
Charles	-	-	1	-
Cecil	-	-	1	1
Garrett	1	-	1	-
Howard	1	-	-	-
Montgomery	-	-	1	-
Prince George's	-	-	1	1
Queen Anne's	-	-	1	-
Kent	-	1	-	-
Washington	2	1	-	-
Wicomico	-	-	1	-

Table 10

Response Frequency of Rating of Coordination of Programs and Services Related to Vocational-Technical/Occupational Education in your Area of the State by Community College and Local Education Agency

	Optimal	High	Average	Low	None
Community College	-	8	7	4	1
Local Education Agency	-	5	9	3	1
TOTAL	0	13	16	12	2

Table 11

Rating of Desireable Degree of Coordination Between Selected State Agencies and the CCs and LEAs

	Desireable Degree of Coordination									
	Intense		High		Average		Low		None	
	CC	LEA	CC	LEA	CC	LEA	CC	LEA	CC	LEA
Correctional Institutions	5	-	7	2	6	3	-	1	4	11
Health and Mental Hygiene Agencies	4	2	12	7	6	7	-	1	-	1
Independent post secondary Schools	5	1	5	4	7	8	-	3	4	2
Juvenile Services	2	1	7	6	8	4	3	3	1	3
JTPA/SDA programs	16	6	5	8	1	2	-	1	-	1
Special Education	3	11	8	3	7	1	3	1	-	1
Vocational Rehabilitation	6	4	7	7	6	3	-	2	2	1
Job Service	4	4	9	7	6	4	-	1	-	1
Industry in area	16	9	5	5	1	1	-	-	-	2
State occupational information coordinating committee	2	2	4	4	6	6	2	2	3	1

Table 12

Rating of Actual Degree of Coordination Between Selected State Agencies and the CCs and LEAs

	Actual Degree of Coordination									
	Intense		High		Average		Low		None	
	CC	LEA	CC	LEA	CC	LEA	CC	LEA	CC	LEA
Correctional Institutions	4	-	3	-	2	2	2	2	10	13
Health and Mental Hygiene Agencies	1	1	5	7	10	3	4	5	1	2
Independent post secondary Schools	3	-	-	-	3	5	7	4	7	9
Juvenile Services	-	-	-	2	6	5	4	6	10	4
JTPA/SDA programs	13	5	6	6	1	6	1	1	1	-
Special Education	-	8	2	5	7	4	10	-	1	-
Vocational Rehabilitation	-	2	5	4	7	9	5	2	3	-
Job Service	-	1	6	2	5	9	5	4	3	1
Industry in area	10	3	8	5	3	6	1	1	-	2
State occupational information coordinating committee	-	-	-	-	4	2	7	9	7	5

Table 13

Rating of Selected State Publications Which Contain Materials Which Might be Useful for Program Planning and Evaluation by CC and LEA Respondents

	Very Useful		Somewhat Useful		Not Useful		Don't Use		Never Seen It	
	CC	LEA	CC	LEA	CC	LEA	CC	LEA	CC	LEA
Labor Market Analysis-1990	4	3	12	13	1	-	-	-	2	1
Affirmative Action Data	1	1	8	6	2	4	3	-	4	5
Your Job Search, Four Steps To Success	1	-	-	3	2	1	4	1	12	11
Computer Occupations in Maryland	2	-	7	4	1	-	5	1	4	11
Employment and Payrolls	1	1	1	1	1	-	6	-	10	14
Employment and Job Openings by County, Occupational Code and Title; 1982 and 1985 and 1986 projections	6	2	13	13	-	-	-	-	1	2
Guide to Products And Services (Office of Planning Data, Maryland Department of State Planning)	1	-	4	3	-	-	3	2	11	11
1980 Census Profile-Users' Guide	-	-	13	5	-	-	2	2	4	8
1980 Census Labor Force Occupational Characteristics	1	-	14	6	-	2	2	2	3	6
1980 Census Profile (2 volumes)	-	-	10	2	-	1	4	3	5	9
Employment in Maryland-Projections	6	4	13	8	-	-	1	-	-	5
Population Projections	2	-	10	5	-	-	1	2	5	7
"Handout Series"	1	-	3	2	-	-	-	2	12	12
STF-3A Profile Package	-	-	-	-	-	-	2	-	15	16

Table 14

Frequency of Response Regarding Use of Published State Data to Significantly Change Any Vocational-Technical Program Activity

	Yes		No	
	CC	LEA	CC	LEA
In the past five years, your school district/community college has initiated, terminated, or phased out, or made significant changes in any vocational-technical/occupational education program primarily due to an analysis of data available from State agencies.	5	9	14	9

Table 15

CC and LEA Response Regarding Agencies With Which They Have Had Opportunity to Discuss Demographic or Labor Market Information

	Community College	Local Education Agency	TOTAL
The Research and Analysis Division of the Department of Employment and Training	10	5	15
Maryland State Data Center of the Department of State Planning	2	1	3
The State Occupational Information Coordinating Committee	2	1	3